IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	: 10/538,953	Confirmation No.	: 5625
First Named Inventor	: Frank Seidel		
Filed	: March 13, 2006		
TC/A.U.	: 1715		
Examiner	: Elizabeth A. Burkhart		
Docket No.	: 011235.56373US		
Customer No.	: 23911		
Title	: Method And Device For CVD Coating Of Workpieces		

APPEAL BRIEF

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Commissioner for Patents
P.O. Box 1450
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Sir:

On April 8, 2010, Appellant appealed to the Board of Patent Appeals from the final rejection of claims 18-27. The following is Appellant's Appeal Brief submitted pursuant to 37 C.F.R. §41.37. The due date for filing this Appeal Brief is June 8, 2010.

I. REAL PARTY IN INTEREST

An assignment of the present application to MTU Aero Engines GmbH, which is the real party in interest, was recorded in the Patent Office on March 9, 2006, at Reel/Frame 017691/0463.

II. RELATED APPEALS AND INTERFERENCES

Appellant is not aware of any appeals, interferences or other proceedings which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 18-27 are pending and under examination. The claims stand rejected in a Final Office Action mailed on January 8, 2010. Because these claims have been rejected at least twice, this appeal is proper under 37 C.F.R. § 41.31. Claims 18-27 form the subject of this appeal. Claims 28-30 and 33-34 have been withdrawn and claims 1-17 and 31-32 have been cancelled.

IV. STATUS OF AMENDMENTS

Appellant has not submitted any amendments subsequent to the Final Office Action mailed January 8, 2010.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 18, which is the only pending independent claim in the application, claims a method for chemical vapor deposition (CVD) coating of workpieces where a coating gas is used to coat the workpieces. An annotated version of claim 18 is provided below with reference to the specification and drawings.

Independent Claim 18

A method for CVD coating of workpieces (11), in particular for aluminizing, where a coating gas is used to coat the workpieces. The process comprises the following steps:

arranging the workpieces to be coated (11) in a coating room (10) (para. 0016 and Figures 1 and 2);

arranging coating granules (17) near the workpieces to be coated (11) (para. 0018 and Figures 1 and 2);

heating the coating room (10) to a process temperature together with the workpieces to be coated (11) and together with the coating granules (17) (para. 0020); and

introducing a process gas onto the coating granules (17) after reaching the process temperature to generate the coating gas (para. 0020).

Thus, in Appellant's invention, the "coating granules", which "generate the coating gas" are arranged near the workpieces to be coated. Thus, this providing of the coating granules, which generate the coating gas, near the workpieces to be coated provides for efficiencies over the systems and methods of the prior art.

In one of these prior art systems, which is discussed in the reference that the Examiner argues anticipates Appellant's invention, i.e., U.S. Patent No. 5,462,013 to Punola et al., and which is even incorporated into the invention of Punola, the coating granules that generate the coating gas are located outside the reactor where the workpieces are located and the coating gas is then introduced into the reactor. Col. 1, lines 34-39. Thus, the coating granules, which generate the coating gas, are not arranged near the workpieces to be coated.

As will be further discussed below, as disclosed in Punola, metal halide ***gas generators*** 20, 22 are used "in practicing the invention" to form an oxidation and corrosion resistant aluminide ***coating*** on superalloy substrates. The gas generators 20, 22 comprise a bed of aluminum pellets over which a process gas (acid halide gas) flows to form the aluminum trichloride or trifluoride coating gas. As can be clearly seen in Figure 1 of Punola, the gas generators 20, 22, and thus the aluminum pellet coating granules for forming the oxidation and corrosion resistant aluminide coating gas, are located separate from the coating chamber 10 in which coating chamber the workpieces 45 to be coated are contained. The coating gas is then ***supplied to*** the coating chamber 10 from ***gas generators*** 20, 22 through lines S1, S2. Col. 4, line 52 – col. 5, line 2.

Therefore, in Punola, as contrasted with Appellant's invention, the coating granules, which generate the coating gas, are not arranged near the workpieces to be coated. Rather, the aluminum coating pellets, which generate the oxidation and corrosion resistant aluminide coating gas, are arranged in gas generators 20, 22, which gas generators are located separate from chamber 10, which contains the workpieces to be coated.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection for review on this appeal are:

(1) Whether claims 18-22 and 24 were properly rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,462,013 to Punola et al. (hereinafter "Punola").

VII. ARGUMENT

A. Claims 18-22 and 24 are not anticipated by Punola

Independent Claim 18

1. Punola Does Not Disclose Arranging "Coating Granules" Which "Generate The Coating Gas" Near The Workpieces To Be Coated

As discussed above, Appellant respectfully submits that Punola does not disclose arranging the "coating granules", which "generate the coating gas", near the workpieces to be coated. In Punola, the aluminum coating pellets generate the oxidation and corrosion resistant aluminide coating gas and these pellets are arranged in gas generators 20, 22 which are located separate from chamber 10, and thus, the workpieces to be coated.

In the Office Action, the Examiner has not acknowledged in any way this explicit disclosure of Punola which, as discussed above, is directly contrary to

Appellant's invention. Rather, the Examiner has argued that other parts of Punola's system, which have other functions, disclose what is explicitly disclosed in Punola as the "coating granules". Appellant acknowledges that a reference may be broadly interpreted, however, Appellant also respectfully submits that a reference may not be interpreted in a manner that is contrary to its explicit disclosure.

The Examiner's argument totally disregards that Punola's "coating granules" are the explicitly disclosed aluminum pellets in the gas generators 20, 22, and instead, argues that the coating granules are the "reactivity-altering material" included in beds B1, B2 in chamber 10. However, Appellant respectfully submits that this "reactivity-altering material" does not "generate" the "coating gas", rather, as its name even implies, only alters the reactivity of the already generated reactive coating gas, which is generated in the gas generators 20, 22, in dependence on the temperature in a coating zone of chamber 10. Col. 2, lines 21-26. Thus, the reactivity-altering material merely alters the reactivity of the generated reactive aluminum trichloride gas based on temperature to provide substantially the same reactivity at all coating zones.

Therefore, Appellant respectfully submits that the reactivity-altering material of Punola's system is not a coating granule that generates a coating gas. Rather, Appellant respectfully submits that Punola's coating granules that generate the coating gas are the ***explicitly disclosed*** aluminum pellets that are contained in the gas generators 20, 22, which gas generators form the oxidation and corrosion resistant aluminide coating. All that this reactivity-altering material does is ensure that the already generated reactive coating gas provides substantially the same reactivity ***for different temperatures in the coating zones***. Therefore, Appellant respectfully submits that the reactivity-altering material of Punola cannot disclose Appellant's claimed "coating granules".

2. Punola Does Not Disclose That A "Process Gas" Is Introduced Onto The Reactivity-Altering Material To Generate The Coating Gas

Appellant also respectfully submits that this reactivity-altering material of Punola cannot be interpreted as the "coating granules" of Punola for the further reason that a "process gas", which is also claimed separately from the "coating gas" by Appellant, is not introduced onto this reactivity-altering material to generate the coating gas.

In Punola, as discussed above, it is the "coating gas" that is generated in gas generators 20, 22 that is passed over the reactivity-altering material to alter the reactivity of the coating gas. Thus, in Punola, no "process gas", which is claimed separately from the "coating gas" by Appellant, is passed over the reactivity-altering material. It is only the coating gas itself of Punola that is passed over the reactivity-altering material to alter the reactivity of the coating gas. Punola, however, does disclose a "process gas", which is separate from the "coating gas", and which is passed over coating granules to form the coating gas. However, this "process gas" is the acid halide/carrier gas flow F that is supplied to the gas generators 20, 22 to flow over the aluminum pellets to form the aluminum trichloride or trifluoride coating gas. Col. 4, lines 62-66.

3. Even A Broad Interpretation Of The Claim Terms "Process Gas", "Coating Gas", And "Generated" By The Examiner Cannot Change The Explicit Disclosure Of Punola

In the Office Action, the Examiner argues that Appellant has not defined the claim terms "process gas" and "coating gas" within the specification and has used a dictionary to define "generate". Thus, the Examiner states that she has given these limitations a broadest reasonable interpretation. Appellant respectfully submits that even if the Examiner can give claims terms a broadest reasonable

interpretation, these claim term interpretations cannot change the explicit disclosure of a reference.

Thus, Appellant respectfully submits that Punola explicitly discloses that the coating gas is formed by flowing an acid halide/carrier process gas flow F over the aluminum pellets in the gas generators 20, 22 to form the oxidation and corrosion resistant aluminide coating gas. Therefore, Appellant respectfully submits that even a broadest reasonable interpretation of the claim terms cannot change this explicit disclosure of Punola when the Examiner attempts to argue that Punola's passing of the already generated reactive coating gas through a reactive-altering material to alter the reactivity of the reactive coating gas discloses Appellant's claimed method.

Thus, Appellant respectfully submits that Appellant's claimed invention and Punola are two completely different methods for CVD coating of workpieces. In Appellant's invention, ***coating granules*** are ***arranged near the workpieces to be coated*** and a process gas is introduced onto these coating granules arranged near the workpieces to ***generate the coating gas***. In Punola, ***aluminum coating pellets*** are disposed in a ***coating gas generator*** to ***generate the coating gas***. The coating gas generator, and thus, the aluminum coating pellets, are not arranged near the workpieces to be coated in Punola. In Punola, any particles arranged near the workpieces are not used to generate the coating gas, but rather, these reactivity-altering particles merely convert the coating gas (AlCl3) to another form. Therefore, for at least the reasons that Punola does not disclose coating granules arranged near the workpieces to be coated to generate the coating gas, as claimed by Appellant, Appellant respectfully submits that independent claim 18 is allowable over Punola. As discussed above, Punola merely discloses reactivity-altering particles arranged in beds B1, B2 to convert the coating gas (AlCl3) to another form.

Dependent Claims 19-22 and 24

Dependent claims 19-22 and 24 stand or fall with independent claim 18.

B. Dependent Claims 23 and 25-27

Dependent claims 23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Punola in view of U.S. Patent No. 4,156,042 to Hayman et al. and GB 1,070,396 to Jenkin. Dependent claims 23 and 25-27 stand or fall with independent claim 18.

VIII. CONCLUSION

For the foregoing reasons, it is respectfully submitted that Appellant's claims 18-27 are allowable over the cited references. As such, Appellant respectfully requests that the Examiner's rejections be withdrawn. Appellant further respectfully requests that withdrawn claims 28-30 and 33-34 be reentered in the patent application since they include the same special technical feature of independent claim 18.

Appellant has paid the fee of $540.00 required in connection with the filing of this Appeal Brief by the EFS on-line payment method. The Office is hereby authorized to charge any deficiency of fees, or credit any overpayment of fees, to Deposit Account No. 05-1323, Docket No.: 011235.56373US.

Respectfully submitted,
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Dated: June 3, 2010

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CLAIMS APPENDIX

1-17. (Canceled)

18. (Previously Presented) A method for CVD coating of workpieces, in particular for aluminizing, where a coating gas is used to coat the workpieces, comprising the steps of:

arranging the workpieces to be coated in a coating room;

arranging coating granules near the workpieces to be coated;

heating the coating room to a process temperature together with the workpieces to be coated and together with the coating granules; and

introducing a process gas onto the coating granules after reaching the process temperature to generate the coating gas.

19. (Previously Presented) The method according to Claim 18, wherein the workpieces to be coated are positioned in several levels arranged one above the other in the coating room and wherein coating granules are arranged directly beneath the workpieces to be coated in the area of each level.

20. (Previously Presented) The method according to Claim 19, wherein the process gas is introduced onto the coating granules in the area of each level.

21. (Previously Presented) The method according to Claim 18, wherein a coating of the workpieces is performed after introducing the process gas onto the coating granules and after generating the coating gas.

22. (Previously Presented) The method according to Claim 18, wherein a halide gas is used as the process gas.

23. (Previously Presented) The method according to Claim 18, further comprising the step of generating a vacuum in the coating room before introducing the process gas into the coating room.

24. (Previously Presented) The method according to Claim 18, wherein process parameters are kept constant during a holding time and wherein the workpieces are coated during the holding time.

25. (Previously Presented) The method according to Claim 24, further comprising the step of pulsing a process pressure during the holding time by lowering the process pressure by withdrawing the coating gas and then generating a second coating gas.

26. (Previously Presented) The method according to Claim 25, wherein after lowering the process pressure, the process gas is again introduced onto the coating granules until the process pressure has been restored.

27. (Previously Presented) The method according to Claim 25, wherein the pulsing of the process pressure is performed once or cyclically by withdrawing the coating gas and reintroducing the process gas onto the coating granules and further comprising the step of depositing an interior coating on a hollow body of the workpieces by the process pressure pulsing step.

28. (Withdrawn) A device for CVD coating, in particular for aluminizing, comprising:

a coating room in which at least one workpiece to be coated is situated; and

a device for generating a coating gas which coats the workpiece;

wherein the device for generating the coating gas is arranged within the coating room near the workpiece to be coated and wherein the device for generating the coating gas introduces a process gas onto coating granules arranged near the workpiece to be coated to generate the coating gas.

29. (Withdrawn) The device according to Claim 28, wherein the device for generating the coating gas includes multiple receptacle devices containing the coating granules, wherein the multiple receptacle devices are arranged in levels running one above the other, and further wherein workpieces that are to be coated are positioned directly above and in the area of the receptacle devices filled with the coating granules.

30. (Withdrawn) The device according to Claim 29, wherein the receptacle devices include a holding tray for the coating granules and a grating which borders the holding tray toward a top of the holding tray and wherein a workpiece to be coated is positioned on the grating.

31. (Cancelled)

32. (Cancelled)

33. (Withdrawn) The device according to Claim 28, further comprising a heating device for heating the coating room and the workpiece that is to be coated to a process temperature.

34. (Withdrawn) The device according to Claim 28, further comprising a pump mechanism for generating a vacuum in the coating room and/or for pulsing a process pressure.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.